

region complementary to at least a portion of said sequence of said oligonucleotides, said sequence of interest being different for each circular template;

(b) immobilizing one oligonucleotide from said plurality of identical oligonucleotides in each of said positions on said solid support to create an ordered array comprising a plurality of identical immobilized oligonucleotides;

(c) adding to each immobilized oligonucleotide of said ordered array a circular DNA template from said plurality of said unique circular DNA templates under conditions such that said immobilized oligonucleotide hybridizes to said circular DNA template to create a plurality of primed circular templates, each primed circular template comprising a different sequence of interest; and

(d) extending each of said primed circular templates along a z coordinate to create an extended immobilized oligonucleotide comprising at least two copies of said sequence of interest, thereby generating an ordered redundant array of extended immobilized oligonucleotides, wherein said ordered redundant array refers to said array having each extended immobilized oligonucleotide comprise at least two copies of said sequence of interest along the z coordinate.

23. (amended) An ordered redundant array of immobilized oligonucleotides produced by:

a) providing: i) a solid support comprising positions for oligonucleotides, said positions defined by x and y coordinates; ii) a plurality of oligonucleotides, each oligonucleotide comprising a sequence complementary to a different portion of the sequence of said target nucleic acid; and iii) a plurality of corresponding circular DNA templates, each circular DNA template comprising a different portion of the sequence of said target;

b) immobilizing each of said oligonucleotides in one of said positions on said solid support to create an ordered array comprising a plurality of immobilized oligonucleotides;

c) adding to each immobilized oligonucleotide of said ordered array along a z coordinate a corresponding circular DNA template under conditions such that said immobilized oligonucleotide hybridizes to said corresponding circular DNA template to create a plurality of primed circular templates; and

d) extending said primed circular templates to create an ordered redundant array of extended immobilized oligonucleotides, each extended immobilized oligonucleotide comprising at least two copies of said portion of said sequence of said target nucleic acid, wherein said ordered redundant array refers to said array having each extended immobilized oligonucleotide comprise at least two copies along the z coordinate of said portion of the sequence of interest contained in said primed circular template.

30. (amended) An ordered redundant array of immobilized oligonucleotides comprising:
a solid support comprising a substrate, wherein said substrate contains i) a plurality of positions for oligonucleotides, said positions defined by x and y coordinates; and ii) a plurality of extended oligonucleotides immobilized on the substrate which extend into the z coordinate, wherein each extended immobilized oligonucleotide comprises a sequence of interest, wherein each sequence of interest is different for each extended immobilized oligonucleotide and corresponds to a portion of a target, and wherein each extended immobilized oligonucleotide comprises at least two copies of said sequence of interest such that the array has redundancy in the z-dimension.

30. (amended) An ordered redundant array of immobilized oligonucleotides comprising:
a solid support comprising a substrate, wherein said substrate contains i) a plurality of positions for oligonucleotides, said positions defined by x and y coordinates; and ii) a plurality of extended oligonucleotides immobilized on the substrate which extend into the z coordinate, wherein each extended immobilized oligonucleotide comprises a sequence of interest, wherein each sequence of interest is different for each extended immobilized oligonucleotide and corresponds to a portion of a target, and wherein each extended immobilized oligonucleotide comprises at least two copies of said sequence of interest such that the array has redundancy in the z-dimension.

31. The ordered redundant array of claim 30, wherein each extended immobilized oligonucleotide comprises at least three copies of said sequence of interest.

32. The ordered redundant array of claim 30, wherein each extended immobilized oligonucleotide comprises at least 10 copies of said sequence of interest.